



[6450-01-P]

DEPARTMENT OF ENERGY

10 CFR Part 430

[Docket No. EERE-2011-BT-TP-0007]

RIN: 1904-AC44

Energy Conservation Program for Consumer Products: Test Procedures for Residential Furnaces and Boilers (Standby Mode and Off Mode)

AGENCY: Office of Energy Efficiency and Renewable Energy, Department of Energy.

ACTION: Final rule.

SUMMARY: In an earlier final rule, the U.S. Department of Energy (DOE) prescribed amendments to its test procedures for residential furnaces and boilers to include provisions for measuring the standby mode and off mode energy consumption of those products, as required by the Energy Independence and Security Act of 2007. These test procedure amendments were primarily based on provisions incorporated by reference from the International Electrotechnical Commission (IEC) Standard 62301 (First Edition), “Household electrical appliances – Measurement of standby power.” In this current final rule, DOE further amends its test procedure to incorporate by reference the latest edition of the IEC Standard, specifically IEC Standard 62301 (Second Edition). The new version of this IEC standard includes a number of methodological changes designed to increase accuracy while reducing testing burden. This final

rule also clarifies the rounding guidance and sampling provisions for the new measurement of standby mode and off mode wattage.

DATES: This rule is effective **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**. The incorporation by reference of certain publications listed in the rule is approved by the Director of the Federal Register on **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

For purposes of compliance with energy conservation standards, compliance with the amended test procedures is required on and after May 1, 2013 (for non-weatherized gas and oil furnaces including mobile home furnaces, and all electric furnaces). The compliance date for any representations relating to standby mode and off mode of residential furnaces and boilers is **[INSERT DATE 180 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**; on and after this date, any such representations must be based upon results generated under these test procedures and sampling plans.

ADDRESSES: The docket for this rulemaking is available for review at www.regulations.gov, including Federal Register notices, public meeting attendee lists and transcripts, comments, and other supporting documents/materials. All documents in the docket are listed in the www.regulations.gov index. However, not all documents listed in the index may be publically available, such as information that is exempt from public disclosure.

A link to the docket webpage can be found at:

<http://www.regulations.gov/#!docketDetail;dct=FR%252BPR%252BN%252BO%252BSR;rpp=25;po=0;D=EERE-2011-BT-TP-0007>. The www.regulations.gov webpage contains simple instructions on how to access all documents, including public comments, in the docket.

For further information on how to review the docket, contact Ms. Brenda Edwards at (202) 586-2945 or by e-mail: Brenda.Edwards@ee.doe.gov.

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I. Background and Authority

Title III, Part B¹ of the Energy Policy and Conservation Act of 1975 (EPCA or the Act), Pub. L. 94-163 (42 U.S.C. 6291-6309, as codified) sets forth a variety of provisions designed to improve energy efficiency and established the Energy Conservation Program for Consumer Products Other Than Automobiles, a program covering most major household appliances, including residential furnaces and boilers (referenced below as one of the “covered products”).² (42 U.S.C. 6292(a)(5) and 6295(f))

¹ For editorial reasons, upon codification in the U.S. Code, Part B was redesignated Part A.

² All references to EPCA in this rulemaking refer to the statute as amended through the Energy Independence and Security Act of 2007, Pub. L. 110-140.

Under the Act, this program consists essentially of four parts: (1) testing; (2) labeling; (3) Federal energy conservation standards; and (4) certification and enforcement procedures. The testing requirements consist of test procedures that manufacturers of covered products must use as the basis for certifying to DOE that their products comply with applicable energy conservation standards adopted pursuant to EPCA and for making representations about the efficiency of those products. (42 U.S.C. 6293(c); 42 U.S.C. 6295(s)) Similarly, DOE must use these test procedures in any enforcement action to determine whether covered products comply with these energy conservation standards. (42 U.S.C. 6295(s))

Under 42 U.S.C. 6293, EPCA sets forth criteria and procedures for DOE's adoption and amendment of such test procedures. Specifically, EPCA provides that "[a]ny test procedures prescribed or amended under this section shall be reasonably designed to produce test results which measure energy efficiency, energy use . . . or estimated annual operating cost of a covered product during a representative average use cycle or period of use, as determined by the Secretary [of Energy], and shall not be unduly burdensome to conduct." (42 U.S.C. 6293(b)(3)) In addition, if DOE determines that a test procedure amendment is warranted, it must publish proposed test procedures and offer the public an opportunity to present oral and written comments on them. (42 U.S.C. 6293(b)(2)) Finally, in any rulemaking to amend a test procedure, DOE must determine "to what extent, if any, the proposed test procedure would alter the measured energy efficiency . . . of any covered product as determined under the existing test procedure." (42 U.S.C. 6293(e)(1)) If DOE determines that the amended test procedure would alter the measured efficiency of a covered product, DOE must amend the applicable energy conservation standard accordingly. (42 U.S.C. 6293(e)(2))

On December 19, 2007, the Energy Independence and Security Act of 2007 (EISA 2007), Pub. L. 110-140, was enacted. The EISA 2007 amendments to EPCA, in relevant part, require DOE to amend the test procedures for all covered products to include measures of standby mode and off mode energy consumption. Specifically, section 310 of EISA 2007 provides definitions of “standby mode” and “off mode” (42 U.S.C. 6295(gg)(1)(A)) and permits DOE to amend these definitions in the context of a given product (42 U.S.C. 6295(gg)(1)(B)). The statute requires integration of such energy consumption into the overall energy efficiency, energy consumption, or other energy descriptor for each covered product, unless the Secretary determines that: (1) the current test procedures for a covered product already fully account for and incorporate the standby mode and off mode energy consumption of the covered product; or (2) such an integrated test procedure is technically infeasible for a particular covered product, in which case the Secretary shall prescribe a separate standby mode and off mode energy use test procedure for the covered product, if technically feasible. (42 U.S.C. 6295(gg)(2)(A))

Under the statutory provisions adopted by EISA 2007, any such amendment must consider the most current versions of IEC Standard 62301, Household electrical appliances – Measurement of standby power, and IEC Standard 62087, Methods of measurement for the power consumption of audio, video, and related equipment³. *Id.* At the time of enactment of EISA 2007, the most current versions of these standards were IEC Standard 62301 (First Edition

³ EISA 2007 directs DOE to also consider IEC Standard 62087 when amending its test procedures to include standby mode and off mode energy consumption. *See* 42 U.S.C. 6295(gg)(2)(A). However, IEC Standard 62087 addresses the methods of measuring the power consumption of audio, video, and related equipment. Accordingly, the narrow scope of this particular IEC standard reduces its relevance to today’s final rule.

2005-06) and IEC Standard 62087 (First Edition 2002).

DOE's current test procedure for residential furnaces and boilers is found at 10 CFR part 430, subpart B, appendix N, Uniform Test Method for Measuring the Energy Consumption of Furnaces and Boilers. This procedure establishes a means for determining annual energy efficiency and annual energy consumption of these products. On October 20, 2010, DOE published a final rule in the Federal Register (hereafter called the October 2010 final rule) amending the test procedures for residential furnaces and boilers to account for the standby mode and off mode energy consumption of these products, as required by EISA 2007. 75 FR 64621. For a more detailed procedural history of the test procedure rulemaking to address standby mode and off mode energy consumption of residential furnaces and boilers, please consult the October 2010 final rule. Id. at 64622.

II. Summary of the Final Rule

As discussed above, EISA 2007 amended EPCA to require that DOE test procedures for covered products include provisions for measuring standby mode and off mode energy consumption. (42 U.S.C. 6295(gg)(2)(A)) In establishing test procedures to address standby mode and off mode energy consumption, EISA 2007 requires consideration of the most current version of IEC Standard 62301 to support the added measurement provisions. Id. In the October 2010 final rule, DOE amended its test procedures to prescribe the use of IEC Standard 62301, "Household electrical appliances – Measurement of standby power," Publication 62301 First Edition 2005-06, which was the most current version of this standard at the time of its

incorporation into the DOE regulations. This final rule fulfilled DOE's obligation under EISA 2007.

However, since that time, DOE has continued to address the requirements of EISA 2007 as it relates to standby mode and off mode for other products. For example, DOE has issued similar test procedure amendments for other heating products (water heaters, direct heating equipment, and pool heaters), and during that rulemaking, commenters identified improvements to IEC Standard 62301 that were under development and nearly finalized. These commenters, representing both manufacturers and energy conservation advocacy groups, are presumably the same as those that would comment on the proposals for furnaces and boilers, and they supported the draft revisions to IEC Standard 62301 as applied to the other heating products. The second edition of IEC Standard 62301 has now been finalized. In the abstract of its January 27, 2011 publication, the IEC reports that the second edition provides practical improvement and possible reduction in testing burden. DOE has reviewed IEC Standard 62301 (Second Edition) and agrees that the second edition does provide for improvement in terms of measurement accuracy and, in addition, provides for possible reduced testing burden by allowing for direct meter reading techniques, where appropriate. DOE believes these improvements would be applicable to a variety of heating products, including furnaces and boilers, as well as the other heating products discussed above. Accordingly, after careful review, in a notice of proposed rulemaking (NPR) published on September 13, 2011 (76 FR 56339; "the September 2011 NPR"). DOE decided to exercise its discretion to consider incorporation of the revised version of the industry standard into the DOE test procedure for residential furnaces and boilers. (42 U.S.C. 6293(b)(2)) In the September 2011 NPR, DOE proposed to incorporate by reference the second edition of

the IEC Standard 62301 standard in its entirety, calling out the appropriate provisions of that standard in DOE's test procedure regulations for residential furnaces and boilers. 76 FR 56339, 56341 (Sept. 13, 2011). This proposal also clarified the rounding guidance and sampling provisions for the new measurements of standby mode and off mode wattage. A public meeting was held on October 3, 2011 to discuss and receive comments on the issues presented in the September 2011 NOPR. The comment period ended on November 28, 2011.

III. Discussion

A. The September 2011 Proposed Rule

The September 2011 proposed rule was part of the continued efforts of DOE to address the requirements of EISA 2007 as it relates to standby mode and off mode for all covered products. In particular, after the standby mode and off mode amendments were developed for furnaces and boilers, DOE considered similar test procedure amendments for other heating products (water heaters, direct heating equipment, and pool heaters), and during that rulemaking, commenters identified improvements to IEC Standard 62301 that were under development and nearly finalized. These commenters, which are largely the same as those that would comment on the proposals for furnaces and boilers, supported the draft revisions to IEC Standard 62301. The second edition of the standard has now been finalized. In the abstract of that finalized publication, the IEC reported that the second edition would provide practical improvement and possible reduction in testing burden. DOE reviewed IEC Standard 62301 (Second Edition) and agrees that the second edition does provide for improvement in terms of measurement accuracy and, in addition, provides for possible reduced testing burden by allowing for direct meter reading techniques where appropriate. DOE believes these improvements are applicable to a

variety of heating products, including furnaces and boilers, as well as the other heating products mentioned above. Accordingly, after careful review, DOE decided to exercise its discretion to consider incorporation by reference of the revised version of the industry standard into the DOE test procedure for residential furnaces and boilers. (42 U.S.C. 6293(b)(2)) Thus, in the September 2011 NOPR, DOE proposed to incorporate into DOE's test procedure regulations the second edition of IEC Standard 62301 in its entirety, and call out the appropriate provisions of that standard in DOE's test procedure regulations for residential furnaces and boilers.

More specifically, DOE's technical review of IEC Standard 62301 (Second Edition) determined that some improvement to the current DOE test procedure is possible with the incorporation of the second edition of the IEC standard as it applies to residential furnaces and boilers. First, a more comprehensive specification of required accuracy is provided in IEC Standard 62301 (Second Edition) that depends upon the characteristics of the power being measured. DOE believes that this most recent revision to the IEC standard provides improved and realistic accuracy provisions for a range of electricity consumption patterns, thereby making the updated test method appropriate for the variety of electricity-consuming devices that form part of residential furnaces and boilers. The new specification can be met by typical, commercially-available test equipment, whereas requirements in the first version may have necessitated specialized instrumentation that is not readily available.

Another important change in IEC Standard 62301 (Second Edition) that relates to the measurement of standby mode and off mode power consumption in residential furnaces and boilers involves the specification of the stability criteria required to measure that power.

IEC Standard 62301 (Second Edition) contains more detailed techniques to evaluate the stability of the power consumption and to measure the power consumption for loads with different stability characteristics. In IEC Standard 62301 (First Edition), the stability of the system is determined by measuring the power consumption over a 5-minute period. If the variation over that period is less than 5 percent, the signal is considered to be stable. There are potential operational modes, however, that could show variation over longer time frames. For example, an electronic component could go into a sleep mode after a 10-minute period. This change in power consumption would not be captured in the 5-minute stability test. IEC Standard 62301 (Second Edition) acknowledges the existence of these different types of modes by creating stability tests for these variable power modes. For constant power modes, the test method specified in the second edition of IEC Standard 62301 matches that specified in the first edition. For cyclical power consumption, the second edition of IEC Standard 62301 adds measurement provisions for situations in which the variation in the signal might not be constant over a 5-minute period. The power measurements would take at least 60 minutes; a test period of this duration is required to accurately capture standby mode and off mode energy consumption for equipment with varying power consumption and is an improvement introduced by IEC Standard 62301 (Second Edition) compared to IEC Standard 62301 (First Edition). These techniques will result in more complete and accurate measures of standby mode and off mode energy consumption over a variety of operational modes. The manufacturer is given a choice of measurement procedures, including less burdensome methods such as direct meter reading methods if certain clearly-described stability conditions are met. DOE believes that the changes incorporated in IEC Standard 62301 (Second Edition) will allow for use of less burdensome methods when appropriate and will

ensure accurate measures of standby energy consumption over a range of operating conditions that may be present in residential furnaces and boilers.

Accordingly, for the reasons discussed above, DOE proposed to incorporate IEC Standard 62301 (Second Edition) in its entirety into the overall list of incorporated references in 10 CFR 430.3 and to call out the appropriate provisions of that standard in DOE's test procedure regulations for residential furnaces and boilers.

In addition, the September 2011 NOPR clarified that the rounding guidance in the IEC Standard 62301 (Second Edition) should be used for the new proposed wattage measurements. Specifically, it was proposed that the following sentence be added to the measurement provisions in sections 8.6.1 and 8.6.2: “The recorded standby power ($P_{W,SB}$) (or $P_{W,OFF}$ where appropriate) shall be rounded to the second decimal place, and for loads greater than or equal to 10W, at least three significant figures shall be reported.” 76 FR 56339, 56342 (Sept. 13, 2011).

Finally, DOE proposed to apply the existing DOE sampling plans used by residential furnace and boiler manufacturers to determine the representative values for annual energy consumption to the newly proposed standby mode and off mode ratings ($P_{W,SB}$ and $P_{W,OFF}$). *Id.* at 56342-43. For a more complete discussion of DOE’s analysis of IEC Standard 62301 (Second Edition), see sections III.A through III.C of the September 2011 NOPR. 76 FR 56339, 56341-43 (Sept. 13, 2011).

B. Public Comments on DOE’s September 2011 Proposed Rule

In response to the September 2011 NOPR, DOE received very little in the way of comment on this matter. In particular, there was no objection expressed as to the use of the updated version of the IEC standard. Only two comments were received from Crown Boiler and the Air-Conditioning, Heating, and Refrigeration Institute (Crown, No. 5 and AHRI, No. 7, respectively), and they are discussed in detail below. In overview, these comments dealt with the overall burden of measuring standby mode and off mode energy consumption and the associated rounding guidance. No comments were received on the added clarification provisions related to sampling.

1. Crown Boiler Comments

Comments from Crown Boiler were supportive of the September 2011 NOPR, in that the company agreed that the use of the second edition of IEC Standard 62301 in lieu of the first edition would result in reduced cost of testing. However, despite this reduction in cost, Crown Boiler opposed testing provisions for standby mode and off mode energy consumption generally, applying to both the current rulemaking and the October 2010 final rule, stating, “...[T]he rule imposes an undue regulatory burden on boiler manufacturers, given the fact that it is unlikely to result in any significant reduction in energy use. In light of this, and in light of Executive Order 13563 (“Improving Regulations and Regulatory Review”), we believe that DOE should modify this rule [in this case, the provisions prescribed by the October 2010 final rule] so that the burden it imposes is commensurate with the real-world benefit it provides (essentially none).” (emphasis added) (Crown, No. 5 at p.1-2)

Initially, DOE notes that most of Crown Boiler's comment involves provisions prescribed by the October 2010 final rule rather than those proposed in the September 2011 NOPR, which are matters beyond the scope of the current rulemaking. However, DOE is addressing the concerns of Crown Boiler here because of the interrelationship between these rules. Crown Boiler maintained that the energy savings potential associated with limiting the standby mode and off mode power consumption of residential boilers would be insignificant because of the small magnitude of energy consumption in these modes. In support of this position, Crown Boiler estimated that most residential boilers would consume less than 5W of standby mode and off mode power and that the annual shipments are only 400,000 units. In response, as summarized in the September 2011 NOPR and as Crown Boiler acknowledges, the EISA 2007 amendments to EPCA, in relevant part, statutorily require DOE to amend the test procedures for all covered products (including furnaces and boilers) to include measures of standby mode and off mode energy consumption.⁷⁶ FR 56339, 56341 (Sept. 13, 2011). Specifically, the statute requires integration of such energy consumption into the overall energy efficiency, energy consumption, or other energy descriptor for each covered product, unless the Secretary determines that: (1) The current test procedures for a covered product already fully account for and incorporate the standby mode and off mode energy consumption of the covered product; or (2) such an integrated test procedure is technically infeasible for a particular covered product, in which case the Secretary shall prescribe a separate standby mode and off mode energy use test procedure for the covered product, if technically feasible. (42 U.S.C. 6295(gg)(2)(A))

Furthermore, although DOE realizes that, as pointed out by Crown Boiler, the level of standby mode and off mode energy consumption of boilers is inherently smaller than that of

other products, such as forced air furnaces, it nevertheless represents a significant level of energy consumption when viewed in the aggregate. For example, the cost of annual standby mode and off mode energy consumption for the commenter's estimate of annual shipments (400,000 units) and wattage would be nearly \$2 million each year for a single year's shipments of boilers ($400,000 \times 8000 \text{ hours} \times 5\text{W} \times .00012 \text{ \$/whr} = \$1.92 \text{ million}$). Some amount of this energy consumption could be limited by an applicable energy conservation standard in the future. This energy saving potential would be part of the analysis in support of such a standard. Accordingly, for these reasons, DOE cannot eliminate the integration of standby mode and off mode into the residential furnaces and boilers test procedures on the basis of insignificant energy savings potential.

Crown Boiler also argued that the overall burden of conducting the additional tests for standby mode and off mode is significant for small businesses. The commenter specifically stated that the purchase cost of equipment needed to run the IEC Standard 62301 test is significant for small boiler manufacturers. On this matter, DOE certified in the October 2010 final rule that the added provisions to address standby mode and off mode energy consumption will not have a significant economic impact on a significant number of small entities. 75 FR 64621, 64628-29 (Oct. 20, 2010). Furthermore, in the September 2011 NOPR, DOE tentatively certified that the possible additional burden represented by the adoption of the second edition of IEC Standard 62301 also would not have a significant economic impact on a substantial number of small entities. 76 FR 56339, 56343-44 (Sept. 13, 2011). In today's final rule, DOE affirms its certification, because it has concluded that the possible additional equipment cost for affected manufacturers is a small investment compared to manufacturers' overall financial investment

needed to undertake the business enterprise of testing consumer products, including residential boilers.

Crown Boiler also commented on the additional testing time that IEC Standard 62301 (Second Edition) may require on units with unstable readings. DOE analyzed this issue in the September 2011 NOPR and tentatively concluded that in the worst case, the labor costs associated with wait time during testing would result in a small additional cost of \$30 per test unit. Id. at 56344. Crown Boiler maintained that in addition to the possible labor cost, the waiting time would result in less availability for the test stand. In response, DOE does not view this as additional burden, since there is no provision in the rule that requires the standby mode and off mode measurements to be made on a particular test stand. Typically, a test stand for full efficiency testing of boilers would require fossil fuel and electricity connections, as well as venting arrangements. If such test stands are in demand, the standby mode and off mode testing could be done in a more convenient place where only an electrical connection is needed.

In its comments, Crown Boiler argued that a second testing burden would arise from the need to separately test different controls systems on various boiler models for standby mode and off mode energy consumption. If, in fact, the energy consumption is different for each type of control system and there are numerous control system options applied to a given basic model, additional testing may be required for those basic models. However, this situation is not unlike any other design feature of a covered product that affects energy consumption. DOE believes this possible difference between control systems, and its potential additional testing costs, could be mitigated by the existing rules regarding conservative ratings, while still satisfying the

requirement in EISA 2007 for incorporation into the DOE test procedures. In a recent rulemaking on certification, compliance, and enforcement, DOE clarified the conservative ratings concept within that final rule's discussion of the concept of "basic model." 76 FR 12422, 12428–29 (March 7, 2011). Specifically, that discussion elaborated on the permitted flexibility in determining how manufacturers choose to group individual models into a basic model with essentially identical energy consumption characteristics. Generally, characteristics, such as different control systems, that have a small effect on overall energy consumption or efficiency need not constitute different basic models and, therefore, would not require additional separate testing. Rather, at the manufacturer's discretion, a basic model could include a variety of control systems, provided that the resulting rated energy consumption would be sufficiently conservative to account for the least-efficient model within the basic model. DOE believes it is reasonable to assume that the manufacturer can determine which control system would be likely to have the highest energy consumption, thereby allowing the manufacturer to avail itself of the conservative ratings in lieu of additional testing, if it so chooses.

Finally, Crown Boiler mentioned as a burden the differences in ambient air specifications between IEC Standard 62301 and the existing DOE test procedure. This is not a valid point, because the October 2010 final rule specifies, expressly to eliminate unnecessary burden, that the existing test procedure specification for ambient air is to be used for all testing. 75 FR 64621, 64623-25 (Oct. 20, 2010). Today's final rule does nothing to alter DOE's existing specifications for ambient temperature.

In sum, the concerns raised by Crown Boiler have not demonstrated an undue burden associated with DOE's proposed standby mode and off mode measurement provisions, which have been adopted pursuant to DOE's mandate in EISA 2007.

Although Crown Boiler would prefer the elimination of standby mode and off mode measurements for residential boilers, in the alternative, it requested consideration of some simplification of the measurement procedures. Specifically, Crown Boiler asked that in lieu of requiring the IEC Standard 62301 measurements, that manufacturers could be allowed, as an option, to assess the standby mode and off mode wattage with a preliminary and less sophisticated measurement procedure. More specifically, Crown Boiler suggested that if that value is below some threshold, the manufacturer would be allowed to report a conservative default value (i.e., a value greater than the measured value). If the preliminary value is above the relevant threshold, Crown Boiler suggested that the IEC Standard 62301 provisions must be used. Crown Boiler mentioned 7.5 watts and 10 watts as the threshold and default values respectively. This concept could have merit, in that it may reduce testing burden; however, it may not, in effect, be significantly different than the conservative rating concept discussed above. Specifically, the manufacturer, in its discretion, may assess the magnitude of the standby mode/off mode loss through limited testing and choose to make a conservative rating. Therefore, DOE believes the conservative rating allowance is a reasonable pathway for the commenter to use to reduce testing burden. Accordingly, DOE has concluded that there is not a compelling need to modify the test procedure to assign specific threshold and default values along with a defined, less-accurate test measurement procedure as the commenter suggested.

2. Air-Conditioning, Heating, and Refrigeration Institute Comments

In addition to proposing the use of the second edition of IEC Standard 62301, the September 2011 NOPR provided rounding guidance applicable to the new measures of energy consumption for furnaces and boilers (i.e., $P_{W,SB}$ and $P_{W,OFF}$). For these values, the September 2011 NOPR clarified that the rounding guidance provided in IEC Standard 62301 (Second Edition) would apply. 76 FR 56339, 56342, 56347 (Sept. 13, 2011). Specifically, DOE proposed to add the following sentence to the measurement provisions of the proposed regulatory text, where appropriate: “The recorded standby power ($P_{W,SB}$) (or off mode power $P_{W,OFF}$, where appropriate) shall be rounded to the second decimal place, and for loads greater than or equal to 10W, at least three significant figures shall be reported.” Id. at 56342. DOE requested comments as to the adequacy and appropriateness of this clarification. Here, it is important to note that DOE has established energy conservation standards utilizing these power measurements (see 76 FR 37408 (June 27, 2011); 76 FR 67037 (Oct. 31, 2011)). These standards are expressed to two significant figures (i.e., 10 watts $P_{W,SB}$ (or off mode power $P_{W,OFF}$, where appropriate) for gas-fired and electric furnaces and 11 watts $P_{W,SB}$ (or off mode power $P_{W,OFF}$, where appropriate) for oil-fired furnaces). Therefore, certification to these standards, utilizing the IEC rounding guidance, would likely require reporting to the second decimal place (i.e., values below the 10 watt level where the IEC rounding guidance requires three significant figures or the second decimal place). Only reported values between 11 watts and 10 watts for oil-fired and electric furnaces would be allowed a single decimal place report using the IEC rounding guidance. AHRI, in its comments, opined that the second decimal place rounding represents an unnecessary rounding burden on manufacturers without adding any value when one

considers the annualized accounting of total electrical energy consumption as represented in the term E_{SO} . (AHRI No. 7 at p. 1-2)

DOE believes that the IEC rounding provisions for wattage measurements are appropriate and within the capabilities of the instrumentation specified in the IEC standard. Specifically, DOE's review of IEC Standard 62301-compliant instrumentation has determined that one can easily support this level of reporting. Moreover, the test procedures for other DOE covered products already utilize IEC Standard 62301 for the wattage measurements, and DOE believes there is benefit in measuring the standby mode and off mode energy consumption of various covered products in a consistent manner for the various DOE requirements (i.e., annual consumption representations or standards compliance reports). In sum, carrying the IEC level of precision (three significant figures) through the annualized consumption calculations does not represent any additional burden, because it is simply a matter of running a calculation and reporting the result. Accordingly, DOE has concluded that this comment does not justify a departure from the IEC provisions, so DOE is adopting the rounding guidance as proposed.

IV. Effective Date and Compliance Dates

The effective date for these amendments is **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**. At that time, representations may be made using the new metrics $P_{W,SB}$ and $P_{W,OFF}$ and any other measure of energy consumption which depends on $P_{W,SB}$ and $P_{W,OFF}$, which were adopted pursuant to these amendments. The compliance date for any representations relating to standby mode and off mode energy consumption of residential furnaces and boilers is **[INSERT DATE 180 DAYS AFTER DATE**

OF PUBLICATION IN THE FEDERAL REGISTER]; on and after this date, any such representations must be based upon results generated under these test procedures and sampling plans.

However, DOE is clarifying here that use of these test procedure amendments related to standby mode and off mode energy consumption are not required for purposes of energy conservation standards compliance until May 1, 2013 (for non-weatherized gas and oil furnaces including mobile home furnaces, and all electric furnaces); this is the compliance date of the recently amended energy conservation standards for residential furnaces, which include standards for standby mode and off mode energy consumption. 76 FR 37408 (June 27, 2011); 76 FR 67037 (Oct. 31, 2011). Again, DOE makes this statement with the caveat that the amended standards only apply to furnaces and not boilers. Amended energy conservation standards addressing standby mode and off mode for boilers will be addressed and apply on the compliance date for the next energy conservation standards rulemaking for those products.

V. Compliance with Other EPCA Requirements

EPCA requires that any test procedures prescribed or amended must be reasonably designed to produce test results which measure energy efficiency, energy use, or estimated annual operating cost of a covered product during a representative average use cycle or period of use, and it must not be unduly burdensome to conduct. (42 U.S.C. 6293(b)(3)) If DOE amends its test procedures, it must determine to what extent, if any, the proposed test procedure would alter the measured energy efficiency or energy use of the covered product, as determined under the existing test procedure. (42 U.S.C. 6293(e)(1)) If DOE determines that the amended test

procedure would alter the measured energy efficiency or energy use, it must amend the applicable energy conservation standard to reflect the average energy efficiency or energy use, as determined using the amended test procedure. (42 U.S.C. 6293(e)(2))

Today's amendments to the DOE test procedure for residential furnaces and boilers incorporates the most current version of IEC Standard 62301 in lieu of the previous version. DOE has concluded that these new provisions will continue to produce valid test results, while reducing testing burden. Accordingly, this final rule meets the requirements of 42 U.S.C. 6293(b)(3).

In addition, DOE has determined that these amendments will not alter the measured efficiency or energy use when determining compliance with the current energy conservation standards for these products or with future standards related to standby mode and off mode for furnaces. Accordingly, no modifications to the currently applicable energy conservation standards are required. This is because the currently applicable energy conservation standard is based on the annual fuel utilization efficiency (AFUE) metric which does not include or depend on the new measures of energy consumption regarding standby mode and off mode. In addition, consistent with its mandate pursuant to EISA 2007, DOE is further clarifying here that use of these test procedure amendments related to standby mode and off mode energy consumption are not required for purposes of energy conservation standards compliance, *until the compliance date of the next standards final rule that addresses standby mode and off mode*. As noted above, DOE has adopted amended energy efficiency standards, as well as standby mode and off mode energy conservation standards, for residential furnaces (but not boilers). 76 FR 37408 (June 27,

2011); 76 FR 67037 (Oct. 31, 2011).

Lastly, DOE does not believe that these test procedure amendments, which adopt a revised version of the IEC test procedure, would significantly alter the energy consumption as measured by the existing DOE test procedure provisions related to standby mode and off mode for residential furnaces and boilers, because the test procedure provisions of IEC Standard 62301 (Second Edition) are limited to providing additional accuracy for the measurements and clarification on the test method. Consequently, DOE does not believe that potential adoption of amendments pertaining to these clarifications and additions would alter any estimates of energy consumption under either DOE's current energy conservation standards or the recently promulgated amended standards.

VI. Procedural Issues and Regulatory Review

A. Review Under Executive Order 12866

The Office of Management and Budget has determined that test procedure rulemakings do not constitute "significant regulatory actions" under section 3(f) of Executive Order 12866, "Regulatory Planning and Review." 58 FR 51735 (Oct. 4, 1993). Accordingly, this regulatory action was not subject to review under the Executive Order by the Office of Information and Regulatory Affairs (OIRA) in the Office of Management and Budget (OMB).

B. Review Under the Regulatory Flexibility Act

The Regulatory Flexibility Act (5 U.S.C. 601 et seq., as amended by the Small Business Regulatory Enforcement Fairness Act of 1996) requires preparation of an initial regulatory flexibility analysis for any rule that, by law, must be proposed for public comment, unless the agency certifies that the rule, if promulgated, will not have a significant economic impact on a substantial number of small entities. A regulatory flexibility analysis examines the impact of the rule on small entities and considers alternative ways of reducing negative effects. Also, as required by Executive Order 13272, “Proper Consideration of Small Entities in Agency Rulemaking,” 67 FR 53461 (August 16, 2002), DOE published procedures and policies on February 19, 2003, to ensure that the potential impacts of its rules on small entities are properly considered during the DOE rulemaking process. 68 FR 7990. DOE has made its procedures and policies available on the Office of the General Counsel’s website at www.gc.doe.gov/gc/office-general-counsel.

Today’s final rule adopts test procedure provisions to measure standby mode and off mode energy consumption of residential furnaces and boilers, generally through the incorporation by reference of IEC Standard 62301 (Second Edition). DOE reviewed today’s final rule under the provisions of the Regulatory Flexibility Act and the policies and procedures published on February 19, 2003. For the reasons explained below, DOE certifies that the final rule will not have a significant impact on a substantial number of small entities.

As noted above, the test procedure incorporates by reference provisions from IEC Standard 62301 for the measurement of standby mode and off mode energy consumption. IEC

Standard 62301 is widely accepted and used internationally to measure electric power in standby mode and off mode.

Based on its analysis of IEC Standard 62301 (Second Edition), DOE has determined that the only possible additional burden represented by the adoption of IEC Standard 62301 (Second Edition) is associated with the testing time. For measurements of power consumption that are determined to be stable, test time would not change. Test time would increase under IEC Standard 62301 (Second Edition), as compared to IEC Standard 62301 (First Edition), should the stability test indicate that the power is being used in a variable manner. For these cases, the revised procedure would increase the time of measurement from the current 15 minutes to up to 60 minutes. No additional setup time would be required for these tests. This possible increase in test time does not necessarily require active labor, because no additional set up is required, and the additional time essentially amounts to a waiting period to determine stability. Nonetheless, assuming the 45 minutes additional test time does incur additional labor cost, the worst-case estimate of an additional \$30 per test unit is a small incremental change compared to the overall financial investment needed to undertake the business enterprise of testing consumer products. For these reasons, DOE does not believe that this final rule adds significant costs nor requires any significant investment in test facilities or new equipment.

The Small Business Administration (SBA) considers an entity to be a small business if, together with its affiliates, it employs fewer than a threshold number of workers specified in 13 CFR part 121, which relies on size standards and codes established by the North American Industry Classification System (NAICS). The threshold number for NAICS classification

333415, which applies to Air-Conditioning and Warm Air Heating Equipment and Commercial and Industrial Refrigeration Equipment Manufacturing (including residential furnaces and boilers), is 750 employees.⁴ DOE reviewed the Air-Conditioning, Heating, and Refrigeration Institute's Directory of Certified Product Performance for Residential Furnaces and Boilers (June 7, 2010),⁵ the ENERGY STAR Product Databases for Gas and Oil Furnaces (Jan. 4, 2010),⁶ the California Energy Commission's Appliance Database for Residential Furnaces and Boilers,⁷ and the Consortium for Energy Efficiency's Qualifying Furnace and Boiler List (2010).⁸ From this review, DOE found that there are approximately 14 small businesses in the furnace and boiler industry. Even though there are a significant number of small businesses within the furnace and boiler industry, DOE has concluded that the test procedure amendments contained in this final rule would not represent a substantial burden to any manufacturer, including small manufacturers, as explained above.

Accordingly, DOE has not prepared a regulatory flexibility analysis for this rulemaking. DOE's certification and supporting statement of factual basis were provided to the Chief Counsel for Advocacy of the SBA for review under 5 U.S.C. 605(b). DOE did not receive any comments demonstrating a significant economic impact on any small entities. Thus, DOE reaffirms and

⁴ U.S. Small Business Administration, Table of Small Business Size Standards (Nov. 5, 2010) (Available at: http://www.sba.gov/sites/default/files/Size_Standards_Table.pdf).

⁵ The Air-Conditioning, Heating and Refrigeration Institute, Directory of Certified Product Performance (June 7, 2010) (Available at: <http://www.ahridirectory.org/ahridirectory/pages/home.aspx>).

⁶ The U.S. Environmental Protection Agency and the U.S. Department of Commerce, ENERGY STAR Furnaces – Product Databases for Gas and Oil Furnaces (Jan. 4, 2010) (Available at: http://www.energystar.gov/index.cfm?c=furnaces.pr_furnaces).

⁷ The California Energy Commission, Appliance Database for Residential Furnaces and Boilers (2010) (Available at: <http://www.appliances.energy.ca.gov/QuickSearch.aspx>).

⁸ Consortium of Energy Efficiency, Qualifying Furnace and Boiler List (2010) (Available at: <http://www.cee1.org/gas/gs-ht/gas-ht-main.php3>).

certifies that this rule will not have a significant economic impact on a substantial number of small entities.

C. Review Under the Paperwork Reduction Act of 1995

Today's final rule would impose no new information or recordkeeping requirements. Accordingly, OMB clearance is not required under the Paperwork Reduction Act. (44 U.S.C. 3501 et seq.)

D. Review Under the National Environmental Policy Act

In this rule, DOE is amending the test procedure for residential furnaces and boilers to address measurement of the standby mode and off mode energy consumption of these products. DOE has determined that this final rule falls into a class of actions that are categorically excluded from review under the National Environmental Policy Act of 1969 (Pub. L. 91-190, codified at 42 U.S.C. 4321 et seq.), and DOE's implementing regulations at 10 CFR part 1021. Specifically, this final rule, which adopts an industry standard for measurement of standby mode and off mode energy consumption, amends an existing rule without changing its environmental effect, and, therefore, is covered by Categorical Exclusion A5 found in 10 CFR part 1021, subpart D, appendix A. Today's final rule does not affect the amount, quality, or distribution of

energy usage, and, therefore, does not result in any environmental impacts.⁹ Accordingly, neither an environmental assessment nor an environmental impact statement is required.

E. Review Under Executive Order 13132

Executive Order 13132, “Federalism,” imposes certain requirements on agencies formulating and implementing policies or regulations that preempt State law or that have Federalism implications. 64 FR 43255 (August 10, 1999). The Executive Order requires agencies to examine the constitutional and statutory authority supporting any action that would limit the policymaking discretion of the States, and to carefully assess the necessity for such actions. The Executive Order also requires agencies to have an accountable process to ensure meaningful and timely input by State and local officials in the development of regulatory policies that have Federalism implications. On March 14, 2000, DOE published a statement of policy describing the intergovernmental consultation process that it will follow in developing such regulations. 65 FR 13735. DOE has examined this final rule and has determined that it does not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. EPCA governs and prescribes Federal preemption of State regulations as to energy conservation for the products that are the subject of today’s final rule. States can petition DOE for exemption from such preemption to the extent, and based on criteria, set forth in EPCA. (42 U.S.C. 6297(d)) Therefore, Executive Order 13132 requires no further action.

⁹ Categorical Exclusion A5 provides: “Rulemaking interpreting or amending an existing rule or regulation that does not change the environmental effect of the rule or regulation being amended.”

F. Review Under Executive Order 12988

Regarding the review of existing regulations and the promulgation of new regulations, section 3(a) of Executive Order 12988, “Civil Justice Reform,” 61 FR 4729 (Feb. 7, 1996), imposes on Federal agencies the general duty to adhere to the following requirements: (1) eliminate drafting errors and ambiguity; (2) write regulations to minimize litigation; (3) provide a clear legal standard for affected conduct rather than a general standard; and (4) promote simplification and burden reduction. Regarding the review required by section 3(a), section 3(b) of Executive Order 12988 specifically requires that Executive agencies make every reasonable effort to ensure that the regulation: (1) clearly specifies the preemptive effect, if any; (2) clearly specifies any effect on existing Federal law or regulation; (3) provides a clear legal standard for affected conduct while promoting simplification and burden reduction; (4) specifies the retroactive effect, if any; (5) adequately defines key terms; and (6) addresses other important issues affecting clarity and general draftsmanship under any guidelines issued by the Attorney General. Section 3(c) of Executive Order 12988 requires Executive agencies to review regulations in light of applicable standards in sections 3(a) and 3(b) to determine whether they are met or it is unreasonable to meet one or more of them. DOE has completed the required review and determined that, to the extent permitted by law, this rule meets the relevant standards of Executive Order 12988.

G. Review Under the Unfunded Mandates Reform Act of 1995

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA) (Pub. L. 104-4, codified at 2 U.S.C. 1501 et seq.) requires each Federal agency to assess the effects of Federal regulatory actions on State, local, and Tribal governments and the private sector. For regulatory actions likely to result in a rule that may cause expenditures by State, local, and Tribal governments, in the aggregate, or by the private sector, of \$100 million or more in any one year (adjusted annually for inflation), section 202 of UMRA requires a Federal agency to publish a written statement that estimates the resulting costs, benefits, and other effects on the national economy. (2 U.S.C. 1532(a) and (b)) Section 204 of UMRA also requires a Federal agency to develop an effective process to permit timely input by elected officers of State, local, and Tribal governments on a proposed “significant intergovernmental mandate.” UMRA also requires an agency plan for giving notice and opportunity for timely input to small governments that may be potentially affected before establishing any requirement that might significantly or uniquely affect them. On March 18, 1997, DOE published a statement of policy on its process for intergovernmental consultation under UMRA. 62 FR 12820. (This policy is also available at <http://www.gc.doe.gov/gc/office-general-counsel>) Today’s final rule, which modifies the current test procedures for residential furnaces and boilers, contains neither an intergovernmental mandate, nor a mandate that may result in the expenditure by State, local, and Tribal governments, or by the private sector, of \$100 million or more in any year. Accordingly, no further assessment or analysis is required under the Unfunded Mandates Reform Act of 1995.

H. Review Under the Treasury and General Government Appropriations Act, 1999

Section 654 of the Treasury and General Government Appropriations Act, 1999 (Pub. L. 105-277) requires Federal agencies to issue a Family Policymaking Assessment for any rule that may affect family well-being. Today's final rule amending DOE test procedures would not have any impact on the autonomy or integrity of the family as an institution. Accordingly, DOE has concluded that it is not necessary to prepare a Family Policymaking Assessment.

I. Review Under Executive Order 12630

Pursuant to Executive Order 12630, "Governmental Actions and Interference with Constitutionally Protected Property Rights," 53 FR 8859 (March 15, 1988), DOE has determined that this final rule will not result in any takings that might require compensation under the Fifth Amendment to the United States Constitution.

J. Review Under the Treasury and General Government Appropriations Act, 2001

The Treasury and General Government Appropriations Act, 2001 (Pub. L. 106-554, codified at 44 U.S.C. 3516 note) provides for agencies to review most disseminations of information to the public under information quality guidelines established by each agency pursuant to general guidelines issued by OMB. OMB's guidelines were published at 67 FR 8452 (Feb. 22, 2002), and DOE's guidelines were published at 67 FR 62446 (Oct. 7, 2002). DOE has reviewed today's final rule under the OMB and DOE guidelines and has concluded that it is consistent with applicable policies in those guidelines.

K. Review Under Executive Order 13211

Executive Order 13211, “Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use,” 66 FR 28355 (May 22, 2001), requires Federal agencies to prepare and submit to OMB a Statement of Energy Effects for any proposed significant energy action. A “significant energy action” is defined as any action by an agency that promulgated or is expected to lead to promulgation of a final rule, and that: (1) is a significant regulatory action under Executive Order 12866, or any successor order; and (2) is likely to have a significant adverse effect on the supply, distribution, or use of energy; or (3) is designated by the Administrator of OIRA as a significant energy action. For any proposed significant energy action, the agency must give a detailed statement of any adverse effects on energy supply, distribution, or use should the proposal be implemented, and of reasonable alternatives to the action and their expected benefits on energy supply, distribution, and use. Today’s final rule is not a significant regulatory action under Executive Order 12866 or any successor order; will not have a significant adverse effect on the supply, distribution, or use of energy; and has not been designated by the Administrator of OIRA as a significant energy action. Therefore, DOE has determined that this rule is not a significant energy action. Accordingly, DOE has not prepared a Statement of Energy Effects for this rulemaking.

L. Review Under Section 32 of the Federal Energy Administration Act of 1974

Under section 301 of the Department of Energy Organization Act (Pub. L. 95-91; 42 U.S.C. 7101 et seq.), DOE must comply with all laws applicable to the former Federal Energy Administration, including section 32 of the Federal Energy Administration Act of 1974 (Pub. L. 93-275), as amended by the Federal Energy Administration Authorization Act of 1977 (Pub. L. 95-70). (15 U.S.C. 788) Section 32 provides that where a proposed rule authorizes or requires use of commercial standards, the notice of proposed rulemaking must inform the public of the use and background of such standards. In addition, section 32(c) requires DOE to consult with the Attorney General and the Federal Trade Commission (FTC) concerning the impact of commercial or industry standards on competition.

Certain of the amendments and revisions in this final rule incorporate testing methods contained in the following commercial standard, the International Electrotechnical Commission (IEC) Standard 62301, “Household electrical appliances – Measurement of standby power” (Second Edition 2011). DOE has evaluated this standard and is unable to conclude whether it fully complies with the requirements of section 32(b) of the Federal Energy Administration Act (i.e., that it was developed in a manner that fully provides for public participation, comment, and review). DOE has consulted with the Attorney General and the Chairman of the FTC concerning the impact on competition of requiring manufacturers to use the test methods contained in this standard, and neither recommended against incorporation of this standard.

M. Congressional Notification

As required by 5 U.S.C. 801, DOE will report to Congress on the promulgation of today's final rule before its effective date. The report will state that it has been determined that the rule is not a "major rule" as defined by 5 U.S.C. 804(2).

VII. Approval of the Office of the Secretary

The Secretary of Energy has approved publication of this final rule.

List of Subjects in 10 CFR Part 430

Administrative practice and procedure, Confidential business information, Energy conservation, Household appliances, Imports, Incorporation by reference, Intergovernmental relations, Small businesses.

Issued in Washington, DC, on November 16, 2012.

Kathleen B. Hogan
Deputy Assistant Secretary for Energy Efficiency
Energy Efficiency and Renewable Energy

For the reasons stated in the preamble, DOE is amending part 430 of Chapter II, Subchapter D of Title 10 of the Code of Federal Regulations, as set forth below:

PART 430--ENERGY CONSERVATION PROGRAM FOR CONSUMER PRODUCTS

1. The authority citation for part 430 continues to read as follows:

Authority: 42 U.S.C. 6291-6309; 28 U.S.C. 2461 note.

§ 430.3 [Amended]

2. Section 430.3 is amended by:
 - a. Removing, in paragraph (m)(1), the words “appendix I, and appendix N” and adding in its place “and appendix I”;
 - b. Adding after “J2,” in paragraph (m)(2), “N,”.
3. Appendix N to subpart B of part 430 is amended:
 - a. By revising the second sentence of the introductory note.
 - b. In section 2.4., by removing the phrase “(First Edition 2005-06)” and adding in its place “(Edition 2.0 2011-01)”;

- c. In section 8.6.1, by removing in the third sentence, the phrase “4.5 *Power measurement accuracy*” and adding in its place, the phrase “4.4 *Power measurement instruments*” and by adding a sentence at the end of the section.
- d. In section 8.6.2, by removing in the third sentence, the phrase “4.5 *Power measurement accuracy*” and adding in its place the phrase “4.4 *Power measurement instruments*”, and by adding a sentence at the end of the section.

The additions and revisions read as follows:

Appendix N to Subpart B of Part 430—Uniform Test Method for Measuring the Energy Consumption of Furnaces and Boilers

Note: *** However, any representation related to standby mode and off mode energy consumption of these products made after [INSERT DATE 180 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER] must be based upon results generated under this test procedure, consistent with the requirements of 42 U.S.C. 6293(c)(2). ***

* * * * *

8.6.1 Standby power measurement. * * * The recorded standby power ($P_{W,SB}$) shall be rounded to the second decimal place, and for loads greater than or equal to 10W, at least three significant figures shall be reported.

8.6.2. *Off mode power measurement.* *** The recorded off mode power ($P_{W,OFF}$) shall be rounded to the second decimal place, and for loads greater than or equal to 10W, at least three significant figures shall be reported.

* * * * *

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